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Educational Televison—Special Number

Television is one of the newer technological developments which, if properly directed and managed, can be made an efficient and powerful instrument of education. Public spirited citizens, and educators in particular, need to become aware of the great educational possibilities in this new and effective form of communication. They should do everything in their power, and now, to see that education will have opportunity to use it extensively. Television must not be given over too largely to commercial uses with education having only a secondary or minor role in it.

This special number of Higher Education presents a group of articles which summarize some of the recent discussion concerning educational television and some of the efforts made to obtain an opportunity for education to use this remarkable medium.

LLOYD E. BLAUCH.

Education Is Interested in Television

By FRANKLIN DUNHAM*

TELEVISION affords for education a new medium of very great significance, and education is now engaged in a battle for recognition in this new field of communications. It has presented its case to the Federal Communications Commission, which in due time will make the decisions that will determine the opportunity education will have to use this new and remarkable device.

Radio Serves Education

Education's battle for recognition in the use of recently developed media of mass communication began almost as early as the potential educational values of radio broadcasting were discovered. The first broadcasting station licensed to an educational institution was WHA at the University of Wisconsin. The licensing at that time (1920) was a function of the Department of Commerce. By 1925 radio broadcasting licenses had been issued to 171 educational institutions and organizations.

A number of these early university-owned broadcast stations were operated primarily as extensions of engineering-college laboratory facilities. Others represented outgrowths of previous "ham station" experience of individual faculty members. Others were undertaken simply as an instrumentality for public relations. In very few instances, indeed, was there any well-thought-out conception of the relation of radio broadcasting to the over-all educational

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program. Supported, customarily, from college-of-engineering or extension-department funds rather than out of the university budget proper, the operating budget was usually too small to allow for systematic programing. Faculty members who acceded to appeals to help out with script-writing or production invariably wearied of the added burden, and got out of their programing commitments at the first opportunity; therefore educational station programing was often lacking in continuity.

Meanwhile, the early commercial stations, through trial and error, were gradually developing programing techniques that attracted more and more listeners, in many instances, winning them away from the educational stations. Faced with a dwindling audience, many of these early educational stations eventually gave up and either surrendered their licenses, or sold out to commercial station operators. Thus by 1934 only 34 of the original 171 stations continued in operation.

However, what is really significant here is the fact that 34 of those that started continued in operation—that they did, in fact, succeed. As educators sought the answer to the question of what, precisely, these stations did to increase public support, while other school-owned stations were constantly losing listeners, it was eventually recognized that they were planning their program services systematically, aimed at serving the educational and cultural needs of their listeners—in short, that they were each doing an educational job.

Once this fact came to be generally understood, a renaissance in educational broadcasting set in. Gradually, the college-owned broadcast station ceased to be just another item of laboratory equipment, and programing responsibilities passed to the instructional-methods and subject-area specialists, with dramatics and music departments contributing the presentation techniques. Not only did the remaining 34 of the original educational stations continue to thrive; other educational institutions not hitherto interested in developing stations, began to do so, so that, today, education has 122 stations operating in the standard broadcast band, or the AM (amplitude-modulation) broadcast band, *plus* another 87 stations in the newer static-free FM (frequency-modulation) broadcast band.

Television To Serve Education

As early as 1944 education's needs for TV channels were recognized when the United States Commissioner of Education, John W. Studebaker, requested the FCC to set aside two TV channels exclusively for educational assignment.

The interest of schools and colleges in broadcasting has not ended there. Even before the start of World War II, some of the larger universities and colleges were already giving serious consideration to the instructional potentialities of television broadcasting, and during the war the wide use of combined aural and visual instructional techniques in training specialists and technicians increased this interest still further. Thus, today, there is one college-owned station in full operation; about a dozen other universities are actively engaged in TV-station planning; and more than 80 colleges and universities, school systems, and libraries are producing educational TV programs.

To date the FCC has licensed 107 TV broadcasting stations, only one of which, WOI–TV at Iowa State College, is operated by an educational institution. In some broadcast areas the FCC has already assigned all the frequencies to commercial stations. This situation poses a very difficult problem for education in its effort to obtain opportunity for its service.

To date the only part of the television spectrum that has been assigned is within the very high frequency channels. Steps have been taken toward the use of the ultra high frequency channels, but the engineering data on this part of the spectrum are too limited to make the use of these channels practicable at present.

Education Makes an Appeal

A "freeze" was placed upon the growing television industry in 1948. Soon afterward educational leaders decided to present their case for a substantial place in television. Representatives of leading educational groups, including the American Council on Education, the National Education Association, the Association of Land-Grant Colleges and Universities, the National Association of State Universities, the National Council of Chief State School Officers, the National Association of Educational Broadcasters, and the Association of Education by Radio, in 1950 set up the Joint Committee on Educational Television. These organizations had filed notices of appearance before the FCC a full year previous and had waited for the Commission to deal with the color TV problem before it called hearings on a reallocation plan.

The Joint Committee created an operating committee with Keith Tyler of Ohio State University as chairman and Belmont Farley of the National Education Association as secretary-treasurer. The Joint Committee also employed as its general counsel Telford Taylor, formerly chief counsel of the FCC, and set up headquarters at the NEA Building in Washington.

The operating committee was instructed to work for (1) preferential treatment for education in the allocation of frequencies in the very high frequency band and (2) an additional allocation of frequencies in the ultra high frequency band. It was also to present an outline of education's rights and responsibilities in the field of mass communications.

The Hearings

The FCC held hearings from November 27 to December 8, 1950. They were opened with a statement by the Commissioner of Education, Earl J. McGrath.[1] Testimony was heard from 61 other persons—educators, public officials, and others interested in educational television—all of whom favored the request for ample frequencies in the television spectrum to be set aside for education's use. The hearings were then adjourned until January 22, when they were resumed. They were closed on January 30. Some of the principal points of view and arguments presented to the FCC are set forth elsewhere in this issue. (See the article "Education's Case Presented At Television Hearings.")

Subsequent Developments

After the close of the hearings the FCC announced it would hold a conference on television this spring at which television programing would be considered and the question of public service on TV stations would be explored.

At a meeting of the members of the Joint Committee on Educational Television held following the close of the FCC hearings, it was decided to ask the president of the American Council on Education to call together representatives of organizations previously represented on the Joint Committee, who would make plans for a continuing service to educational institutions and systems that want to use or produce educational television programs. The Committee hopes that an office can be established in Washington to render service to those who plan to set up TV broadcasting stations, to provide TV programs, and to use TV programs for educational purposes. The office should also encourage the establishment of noncommercial educational TV stations.

The president of the American Council on Education held the suggested meeting on March 22, 1951, and at that time the Joint Committee made a report, and the future possibilities of educational television were explored. Steps were also taken looking to the establishment of a permanent office on educational television.

[1] See HIGHER EDUCATION, January 1, 1951, for the complete statement by Commissioner McGrath.

Educational Television Study

A JOINT RESOLUTION introduced in both branches of the Congress would authorize and direct the Federal Communications Commission "to make a full and complete study and investigation with respect to the problem of reservation of television frequencies for use by educational institutions for the purpose of nonprofit educational programing." The Commission would also be directed "to give consideration to the allocation of at least one frequency within each State of suitable geographic region to educational institutions for the purposes of educational programing." The Commission would be directed further to report to the Congress the results of the study together with its recommendations, if any, for necessary legislation.

Television Course at Johns Hopkins

TELEVISION STATIONS in Baltimore are cooperating with The Johns Hopkins University in presenting a course entitled "Television Production." It carries academic credit at the university but is being taught in the studios.

Instructors are the heads of various departments at each studio. They will cover general activity in TV studios, cameras, control room, scenery, lighting, special effects, and commercials. At the close of the course in June, each section of students will have prepared one complete program for telecast by the studios in which they have been working.

One station has invited the class to accompany its remote unit on several of its remote telecasts. These demonstrations will be given at a time other than the regularly scheduled class periods.

Education's Case for Television Presented at Hearings

BY ROBERT B. HANNINGS*

TELEVISION in education has been the concern of the Federal Communications Commission for some time. Shortly after the issuance of its July 8, 1949, "Notice of Further Proposed Rule Making," covering most aspects of telecasting in the United States, the Federal Communications Commission decided to define the issues in more detail to facilitate the hearings and the presentation of evidence. It arranged that the question of reservation of television channels for education should be treated as a specific issue in the general proceedings. Inasmuch as the Commission in determining the order of the hearings decided to proceed, first, with the complicated technical question of color television, which occasioned very long and highly controversial hearings, educators were unable to make definite plans for presentation of testimony until the first part of November 1950, when the Commission was first able to set a definite date, November 27, for the commencement of the hearing on the reservation question.

Educators File Notice

On August 26, 1949, there was filed a "Notice of Appearance and Comments by the United States Office of Education, Federal Security Agency," which proposed that witnesses representing the Office of Education would present evidence to show: "(1) The need for setting aside exclusively for use by school systems, colleges, and universities a band consisting of 20 percent of the TV broadcast channels in the new UHF band * * * plus, (2) the desirability of the Commission's readjusting present allocations in the VHF TV broadcast band so as to make provision for at least one VHF educational TV station in every metropolitan center and in every major college center." About the same time, several educational associations made requests to be heard. They subsequently organized the Joint Committee on Educational Television and consolidated their requests. There is little substantial difference between their requests for reservations and those of the Office of Education.

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Education's Point of View

The Commission has plenary powers to make the reservations for educational television as requested by these petitioners. The Commission in 1945 made somewhat similar reservations for educational institutions in FM radio by setting aside the 88–92 megacycle band for such purposes. The testimony of the witnesses appearing on behalf of the educators, therefore, was directed not at establishing a particular factual situation which would bring the matter within the jurisdiction of the Commission but at convincing it that the public convenience, interest, or necessity can best be served by complying with the request of the educators.

It was desirable to present evidence to establish:

(1) That television is not only a highly useful means of education but is also superior in many respects to the more traditional means of instruction and even to other visual aids to education;

(2) That certain accepted educational techniques may be utilized in, or are adaptable to, television and that other useful ones are in the process of development;

(3) That a substantial number of educational institutions are presently planning to construct and operate television stations within the foreseeable future;

(4) That commercial TV stations offer insufficient facilities for educational television programing to constitute an answer to the problem;

(5) That the protection of education's right to access to this highly desirable means of mass education should not be made dependent upon its ability to utilize immediately all of the channels the reservation of which was requested.

Values of Pictorial Presentation

Specialists in visual aids testified and presented exhibits to show that pictorial presentation is a highly successful method of instruction, being more realistic and ordinarily creating more interest than most other methods of instruction. It was also demonstrated that many basic educational courses,

even in such difficult subjects as philosophy and foreign languages, can be successfully taught through accessible visual aids. Many noted educators, as well as the visual aid specialists, pointed out that television is superior to the other visual aids both in its immediacy of presentation and its ability to reach people.

Witnesses pointed out that techniques developed in dramatic schools, educational radio programing, and even in successful classroom instruction are readily adaptable to educational television programing. Many of the witnesses who had had considerable experience in educational telecasting as, for example, in such programing by the Philadelphia and Baltimore public school systems, showed how specific techniques could be evolved for integrating such programs into classroom work and for adult education. Some witnesses with long experience relating to commercial radio and television suggested means of improving the techniques of educational telecasting to increase listener interest without reducing the educational content of the programs.

Interest of Educational Institutions

The sults of several surveys conducted by educational organizations as to the immediate interest of educational institutions in the construction and operation of television stations were called to the attention of the Commission. It was established that there is a growing interest by educational institutions in the use of television as part of an educational institution or system. This interest had manifested itself in various ways, such as filing of applications for channels, accumulation of engineering data, and the initiation of surveys and plans. Witnesses representing specific institutions described the steps which they had taken.

Educators from every section of the country presented evidence that in the initial phase of commercial television certain periods of time were made available to educational institutions for programing purposes, but that as the demand for sponsored time on television stations increased, the amount of time available for educational programing was reduced or moved to periods which were of little utility to the educators. A number of witnesses testified that the history of educational programing on radio stations demonstrates that education cannot rely upon commercial television stations to make sufficient desirable time available to satisfy its potential programing needs. These witnesses unanimously rejected the idea that utilization of commercial television stations could meet the growing demands for educational programing.

Delayed Action in Education

The scarcity of television channels has created a great demand that all television channels be allocated to qualified applicants at the earliest possible time. Commercial licensees would almost certainly be able to utilize the television channels in any particular locality at a date earlier than the educational institutions serving that locality.

Many of the educators testified that the immediate utilization of such channels for education should not be decisive. They pointed out that education could not move rapidly into a new field requiring substantial financial investment, but that the Federal and State Governments have customarily protected the interests of education despite this characteristic of slow action. Many of the witnesses illustrated this point by referring to the great grants of public lands by the Federal Government for educational use even though it was realized at the time of the grant that the property would probably not be utilized by education for many years thereafter. They pointed out that the Federal Government's control of the airways and the Commission's duty to exercise its authority for the public convenience, interest, or necessity justified their conclusions that the interest of education should be protected in this field even though, for one reason or another, education might not be able to take full advantage of the reservations at an early date.

Final Hearings

Following the first hearings, the Joint Committee on Educational Television appointed a subcommittee to make a comprehensive survey of the TV situation in the northeastern region of the United States. This region, consisting of the New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia, was chosen for sampling because it represents all the problems of density of city population, rural areas, wide topographical differences, and, therefore, frequency assignments that are more varied than are found in any other area of the United States.

On the resumption of the FCC hearings on January 22 the findings of the survey were presented. The report showed tentative future needs for 49 TV stations in 42 locations and 16 channels in the

UHF band. Assignment of frequencies in the VHF band would reduce the number of stations needed in UHF and, therefore, would reduce the number of channels to be reserved by whatever number of VHF channels might be so designated. These figures were substantiated by George P. Adair, former chief engineer of the FCC, who appeared for the JCET at the resumed hearings.

Between the November-December and the January hearings the television programs on seven New York stations, four of them key stations for national networks, were monitored for a full 7-day week (January 4–10, 1951). The report, which was presented at the FCC hearings, stated that 10 percent of all television broadcast time was devoted to advertisements and 18 percent of the time was utilized for "Western" and "Crime" drama. It stated also that only one educational program, the *Johns Hopkins Science Review*, was presented during the entire week, according to the FCC definition of an educational program—one "prepared by and in behalf of an educational organization."

Witnesses for the commercial interests in television appeared at the January hearings. They admitted that television was a highly useful means of education, but for varying reasons, most of which had been foreseen by the educators, objected to the request for reservations.

Witnesses for Education

A total of 71 witnesses at the hearings supported the request for television reservations. Their names and the organizations, if any, with which they are connected, are:

Members of the Congress.—Clinton Anderson, Senator from New Mexico; *Owen Brewster*, Senator from Maine; *A. S. Monroney*, Senator from Oklahoma; *Leverett Saltonstall*, Senator from Massachusetts; *John Vorys*, Representative from Ohio.

Representatives of colleges and universities.—Kenneth Bartlett, Syracuse University; *Kermit Eby*, The University of Chicago; *Christine Gibson*, Harvard University; *Herbert J. Gooden*, New Jersey State Teachers College, Montclair; *John Hannah*, Michigan State College; *Park Livingston*, University of Illinois; *H. B. McCarthy*, University of Wisconsin; *Rev. Leo McLaughlin*, S. J., Fordham University; *Carl H. Menzer*, State University of Iowa; *James Miles*, Purdue University; *Arthur Moehlman*, State University of Iowa; *Burton Paulu*, University of Minnesota; *John R. Richards*, Wayne University; *Bernardine Schmidt*, Special Education Clinic and Teachers College, Columbus, Miss.; *William H. Sener*, University of Southern California; *M. R. Trabue*, Pennsylvania State College; *Keith Tyler*, Ohio State University.

Representatives of school systems.—Richard C. Berg, Springfield, Mass.; *Maurice G. Blair*, Los Angeles, Calif.; *John J. Desmond, Jr.*, Commonwealth of Massachusetts; *Paul Durrie*, Des Moines, Iowa; *Miss Martha Gable*, Philadelphia, Pa.; *Louis P. Hoyer*, Philadelphia, Pa.; *Miss Ira Jarrell*, Atlanta, Ga.; *James F. Macandrew*, New York, N. Y.; *James Marshall*, New York, N. Y.; *Mark C. Schinnerer*, Cleveland, Ohio; *Vaughn Seidel*, Alameda County, Calif.; *Morris Shaeffer*, Bureau of Adult Education, New York State Department of Education; *William J. Wallin*, Board of Regents, University of the State of New York; *George E. Watson*, State of Wisconsin.

Members of educational organizations.—Howard L. Bevis, Association of Land Grant Colleges and Universities *and* National Association of State Universities; *Francis J. Brown*, American Council on Education; *John M. Cory*, American Library Association; *Belmont Farley*, National Education Association; *Clarence Graham*, American Library Association; *Mrs. John E. Hayes*, National Congress of Parents and Teachers; *Stuart Haydon*, National Association of Educational Broadcasters; *Donald Horton*, National Association of Educational Broadcasters; *Richard C. Hull*, National Association of Educational Broadcasters; *James McPherson*, National Education Association; *Grace Rawlings*, Department of Elementary School Principals; *David Ruhe*, Medical Film Institute; *Edward T. Schofield*, Educational Film Library Association; *Dallas Smythe*, National Association of Educational Broadcasters; *W. C. Toepelman*, American Council on Education; *Mrs. Pearl Wanamaker*, National Council of Chief State School Officers; *Miss Constance Warren*, American Association of University Women; *Mrs. Charles Weeks*, Radio and Television Council of Greater Cleveland.

Government officials.—Floyde Brooker, Office of Education, Federal Security Agency; *Keith Heimbaugh*, Department of Agriculture; *Earl James McGrath*, Office of Education, Federal Security Agency; *Clark Tibbits*, Committee on Aging and Geriatrics, Federal Security Administration; *Harold A. Voss*, Training Applications Section, Special Devices Center, U. S. Navy; *M. C. Wilson*, Department of Agriculture.

Other witnesses.—George P. Adair, consulting engineer; *Merlin K. Aylesworth*, former president of the National Broadcasting Co.; *Robert Engler*, National Farmers Union; *Dorothy Gordon*, New York Times; *Clayton Griswold*, Protestant Radio Commission; *Harriet Hester*, American Medical Association; *George Meany*, American Federation of Labor; *M. S. Novik*, Radio Consultant to Organized Labor; *Charles Russell*, Museum of Natural History, New York, N. Y.; *Seymour N. Siegel*, Radio Communications for the City of New York; *Robert Louis Shayon*, author and critic.

Educational Institutions and Systems Render Public Service Through Television

BY FRANKLIN DUNHAM*

SCHOOLS AND COLLEGES are not entirely strangers to television. To date 56 colleges and universities, 4 medical schools, 19 local public school systems, and 2 public libraries have rendered public service through telecasting, almost all of it over commercial stations. Schools and colleges have the resources in their staffs, libraries, and laboratories to provide telecasts which are difficult and expensive for TV stations to produce.

The following notes and descriptions present some of the facts concerning the efforts of these institutions.

New England

Among the universities in the East, Yale has taken the lead in writing and producing television shows at New Haven. Professor Edward Cole is teaching television techniques to drama students of the university and is producing a series of experimental programs over local TV facilities. Boston University offers courses in its Department of Public Relations which has produced TV broadcasts in that city. The Museum of Natural History in Boston produces a prize-winning show in the natural sciences planned to attract viewers among children and adults alike. The Lowell Institute Broadcasting Council in Boston, whose membership includes Harvard University, Boston College, Northeastern University, Tufts College, and Boston University, has pioneered in producing programs on housing, city planning, and other subjects over WNAC-TV and WBZ-TV in that city.

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Amherst College gave a TV performance of Shakespeare in the Folger Library in Washington, D. C., doing *Romeo and Juliet* with a student cast in the spring of 1949. The play was performed in a setting which was a replica of Shakespeare's old Globe Theatre.

New York

New York University, Columbia University, Hunter College, the College of the City of New York, Queens College, Brooklyn College, and Fordham University cooperate constantly with the TV stations of New York in producing both musical and dramatic programs. Erik Barnouw at Columbia University and William Coleman at Fordham conduct courses in television. Robert T. Rock, Jr., of Fordham, conducts evaluation surveys for the U. S. Naval Special Devices Center at Port Washington, N. Y.[1]

One of the most carefully planned TV set-ups is at Syracuse University in New York State, where a gift representing $150,000 made possible fully equipped TV studios. Through a cooperative arrangement, all live programs are produced on the campus and carried by coaxial cable to WSYR-TV in Syracuse for broadcasting over the entire area.

Cornell University in New York State now offers educational TV programs, originating at its Film Center and seen over a number of TV stations which regularly offer educational programs.

[1] The Center is a major institution of television research in America. Pennsylvania State College has established a similar relationship with the Navy. It studies educational implications of television, particularly in the accelerated teaching of skills for the Armed Forces.

Philadelphia and Vicinity

At Princeton the Institute of Public Affairs makes audience surveys and studies program content and structure, and the Triangle Club, using nearby TV stations, puts on its own original plays for "the million" audience.

The University of Pennsylvania has pioneered in closed-circuit television within its medical schools in order to present the intricacies of surgery and the treatment of bodily ills to its interns and students in training. Temple University and 18 other educational institutions in nearby States have just begun a "TV University of the Air," perhaps the first in America to attempt a 5-day week series of programs on the sciences, social sciences, art, literature, and music for adult audiences. Roy Marshall began his science TV broadcasts at the Franklin Institute in Philadelphia. Dr. Marshall is now professor of astronomy at the University of North Carolina but continues his programs of simplified science over national television networks. The Philadelphia City Schools have been leaders in presenting programs on the same subject-matter basis for school children during school hours.

Baltimore and Washington

Some contributions have come from Baltimore. Johns Hopkins University first showed the doctors of the American Medical Association gathered in Washington its skills in medicine and surgery. It later introduced its popular "Science Review" over the Dumont network of stations. Accomplishments in science are demonstrated by the men who achieved them. One extraordinary program called "Seeing Is Not Believing" clearly showed the credulity of the nonscientific mind.

The Baltimore Public Schools also have a record of achievement, especially in a program that brings the classroom into the home in the evening hours, so that parents may see and hear what their children are being taught in schools.

American University in Washington, through its "District Viewpoint," gave the people of the District of Columbia an opportunity to discuss their local problems. The Catholic University of America presented plays for the CBS-Color Experiments which were put on by its School of Dramatic Art.

The South

The Communications Center at the University of North Carolina writes and produces television programs for a variety of philanthropic and public service organization clients in the State. Atlanta Public Schools, Emory University, Georgia Institute of Technology, and Atlanta University utilize television over their local outlets. The University of Miami in Florida has a long-established department of communications which has produced a series of TV programs in drama, art, and literature.

The University of Alabama, Tulane University, Loyola University (New Orleans), and Louisiana State University put on television programs. The University of Texas "Radio House" has written and produced original television programs for many Texas stations. The University of Oklahoma also produces television programs.

The University of Louisville and the University of Kentucky are both active in writing and producing TV programs, the former in cooperation with the Louisville Free Library Center.

Central West

The service of WOI-TV at Ames, Iowa, is described elsewhere in this issue.

In Cleveland, Western Reserve University and the Cleveland Public Schools produce educational TV programs.

Both Purdue University and the University of Indiana carry on activities in television. They teach courses in TV and write and produce week-by-week programs.

The University of Michigan this year began a full hour program on Sundays over WDTR Detroit with certificate credit in adult education for those who complete the course. This program is divided into three 20-minute parts: The first, regular college instruction; the second, a lighter vein of instruction in hobbies, like sketching, silver work, and bookbinding; and the third, a picture review of the university at work, showing the accomplishments in public service at Ann Arbor.

The University of Chicago and Northwestern University have pioneered in television. Rosary College and Loyola, both in Chicago, have lent their aid to TV through original programing. The Chicago public schools have kept constant vigilance on programs through their monthly *TV Bulletin* and have produced a regular series of their own.

The University of Wisconsin offers courses in TV.

The University of Minnesota and the Minneapolis public school system have for several years provided

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Visual Education and Television

By FLOYDE E. BROOKER*

TELEVISION is many things. It is a step in man's conquest of time and space. It is a new influence in the lives of children. In terms of the basic form or medium of communication that it uses, it is a further means of "visual education."

Television communicates through the use of still or motion pictures projected on a small screen and accompanied with sound. This sound may be the speech of the characters pictured, the speech of a commentator, the natural noise of such things as slamming doors, or it may be a musical accompaniment.

Perceptual in Character

Pictorial forms of communication are basically perceptual in character. Communication through pictures tends in the main to be very specific. In a sense most words express generalizations. The perceptual character of picture forms of communication constitutes both their strength and their weakness.

It is a weakness in the sense that motion picture programs, as well as television shows, tend to be discrete segments of a whole, the understanding of which requires a profound cultural experience. They cannot present as great a scope of material at one time as verbal forms can.

On the other hand, pictures are specific. One of the great difficulties of all instruction is that students often lack the experience necessary to understand words fully. Everyone who has taught knows the difficulty in making certain that all children understand the meaning of the word "crane" when it is used in a description of how the colonial mothers cooked the food for the family.

Since pictures deal with the perceptual level of experience, they can cross international boundaries more easily than words. They can and do appeal to a larger audience, for it requires less schooling, experience, or training to comprehend adequately a pictorial message than a verbal message.

Extend Scope of the Senses

A second characteristic of pictorial forms of communication is their ability to extend the scope of the visual senses. In part this derives from the mechanics of presentation. Motion pictures can slow action down, or speed it up until it has "meaning" for the audience. The speed can be so regulated as to portray within a span of 10 minutes the entire life cycle of, for example, a bean plant, revealing the development of the root system, the turning of the plant toward light, and plant growth in a new and comprehensive way. On the other hand, the motion picture can so slow down the action of a bullet that one can see how it pierces a piece of glass, the pattern the shards take in falling, and the deceleration that occurs.

The motion picture can also magnify both in the "taking of the picture" and in its projection. For example, the corpuscles of blood can be shown moving through the capillaries. It should be noted that the experience of students as a group in seeing this sort of action, as opposed to individual viewing through microscopes, has significant implications for education. A similar observation applies to the use of the motion picture in contrast with the use of the telescope.

Students Learn by Experience

Motion pictures, television, and other picture forms of communication offer experiences which are often more vivid and more effective educationally than are experiences otherwise available. It is usual in the making of a motion picture to take three times as many pictures as are used in the final presentation. Material which is purely repetitive, of slight educational significance, or which obscures the concept to be developed can thus be eliminated. In those subjects where the primary purpose of instruction is the development of physical skills, this advantage of the film demonstration is of particular importance. In passing, it should be noted also that in these subjects the film demonstration provides an opportunity for all the students to view the action-to-be-imitated from exactly the same viewpoint. In such subjects as social studies, the order in which the content is presented through a film makes it easier for the students to develop the generalizations necessary for an effective understanding.

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This power of the motion picture to provide "real" experience has significant potentials for helping to overcome one of the growing problems of instruction. Increasingly, the events which affect the lives of students are remote in terms of space and time. The meaning of the Berlin airlift, the UN Commission in Palestine, and the campaign against the hoof-and-mouth disease in Mexico are all important things, and yet difficult to make real by ways other than the use of pictorial forms of communication.

These basic characteristics of pictorial forms of communication have many implications for education. Some of them have been clarified by research studies, in this country and abroad, which have been carried on during the past 25 years. Others depend upon the observation of teachers and on the generally recognized power of the motion picture and television presentation.

Implications for Education

Some of the implications apparent from the research studies are that pictorial forms of communication offer the bright promise of being able to (1) expedite the effective acquisition of physical skills, facts, and understanding of principles; (2) stimulate and arouse interest and further participation by students; and (3) offer new and more effective approaches to attitude development. More generally there is reason to believe that pictorial forms of communication can (4) more readily and easily than other forms provide for an effective international communication; (5) broaden the mass audience reached by the communication; and finally (6) offer a new kind of cultural force which can change habits of thinking and actions which are passed on from generation to generation.

Acquisition of Skills and Information

There is considerable agreement among the studies made that the carefully planned use of films, as contrasted with the more traditional methods of instruction, can materially shorten the time required for learning physical skills and facts and for the development of understanding of basic principles. The degree to which the time can be shortened varies greatly from study to study. Some studies based on the use of training films in industry during the war indicated that lathe operators with the use of films could learn in 1 week as much as they had previously learned in 3 weeks with the usual type of instruction. Other studies and observations indicate a range of from 10 to 80 percent saving of time. A peacetime study in the use of films in developing athletic skills verifies the wartime experience of the Office of Education and of the Armed Forces. Other studies came to the same conclusion with respect to the acquisition of facts and the development of understanding of basic principles.

Stimulate Interest and Participation

There is also general agreement that films arouse interest which leads to further student participation. Freeman and Hoefer found that students using films in health classes tended to bring in more clippings, pictures, and other materials on their unit than did classes using more traditional methods. Knowlton and Tilton in an investigation of the use of history films in the seventh grade reported that films stimulated a greater number of voluntary recitations and greater outside reading than did the more traditional methods. Wartime studies of the use of war training films indicated increased interest of the trainees, and this was reflected in an appreciably reduced rate of absenteeism. The general interest that pictorial forms of communication arouse is also attested to by the manner in which children are willing to sit by the hour viewing motion pictures and television shows.

Development of Attitudes

Charters, in summarizing the effects of motion pictures on attitudes, reports that films do have definite and lasting effects on social attitudes, that this is specific in terms of a given child and a given motion picture, and that this emotional effect is cumulative. Other and more informal studies have indicated the effectiveness of films in furthering emotional objectives. Some rough measure of this effectiveness is the degree to which many children identify themselves in terms of clothing and language and behavior with their favorite motion picture and television characters. In such areas as tolerance, mental hygiene, and democracy, motion pictures offer bright hope of an effective way of implementing the emotional objectives to which educators have so long subscribed.

International Medium of Communication

It has been suggested that the message which could be sent to all peoples with the greatest likelihood of being understood would be a picture of a mother tending an infant. Motion pictures have achieved large world audiences with only slight

modifications of the original pictures. They have thus done much to create a kind of world culture. Their influences on aspects of life such as "love-making" have not been measured but are attested to by observers of the life and customs of peoples all over the world.

This characteristic of the motion picture is important in terms of many programs of assistance abroad, where the problem is to reach vast groups of illiterate peoples. People who cannot read or write can understand simple motion pictures which show techniques of sanitation, health, and improved farming practices, and simple skills of home construction.

Adult Education

Motion pictures are also highly effective in adult education. Few people can read all the things they wish to read. Fewer still will read serious discussions and act upon them. In these times when it is necessary on so many issues to bring the education of the people up to date, this ability of the film to interest, to secure attention, and to provide information compactly and effectively is important.

A New Cultural Force

The cultural force of motion pictures is an aspect of motion pictures that is less understood than many others. Much of what is known about it is the result of random and unanticipated results. When a star in a motion picture takes off his shirt and discloses that he wears no undershirt, the sales of undershirts fall off appreciably. The personal and domestic life of a motion-picture star can make the headlines of the newspapers in a way that was undreamed of before the coming of the motion picture.

The objective nature of the motion picture, as well as the intimate and detailed nature of its presentation, affects the behavior of many children and youth in those phases of life which have remained untouched by the more traditional modes of communication. It has led to an unprecedented change in mores which affects all phases of living.

Summary

These are some of the things that have been learned from the use of motion pictures and other pictorial forms of communication. The research that has been done to date is scattered. Some has been excellent, but taken as a whole it covers only small islands of the total area, tends to be sketchy, and has touched few of the basic possibilities.

The knowledge gained in the use of motion pictures in education applies to television, for television is basically another form of picture communication. It can make unique contributions of its own, but it is unlikely that the basic finding will be materially altered.

Twelve Colleges Apply for TV Licenses

TWELVE INSTITUTIONS of higher learning are now ready for building and construction permits in television as soon as the Federal Communications Commission lifts its "freeze" of September 1948.

ORIGINAL APPLICATIONS

Georgia Institute of Technology, the State University of Iowa, Loyola University (New Orleans), St. Louis University, Cornell University, and Harding College had all filed applications before September 1948 but had not been granted permits for operation. Of all the colleges whose applications were made before September 1948, only the State University of Iowa has signified its intention of operating on a noncommercial basis.

The Lewis College of Science and Technology at Lockport, Ill., filed an application in November 1950 to operate in the commercial band of frequencies.

NEW APPLICATIONS
FOR NONCOMMERCIAL OPERATION

Ohio State University, Michigan State College, the University of Illinois, the University of Southern California, and Concordia College in Missouri have now prepared applications for TV licenses in their respective areas of the country subject to the regulations of the Federal Communications Commission. All these institutions have had a long background of experience in radio programing and production, each possessing its own radio station. At Ohio State, home of the 21-year-old Institute of Radio in Education, the Ohio School of the Air has pioneered in radio programs in adult education courses of general interest. The station of the Michigan State College at Lansing represents a development of many years of service, particularly in agriculture and home economics, as well as in school programs for Michigan.

The station of the University of Illinois, also one of the early radio experiments, has both AM and FM outlets on the campus and is constructing a new AM-FM-TV tower on the extensive grounds of the Allerton Estate, near Urbana. The University

of Southern California has a set-up in Los Angeles which carries an 8-hour FM schedule with particular emphasis on good music.

Concordia College has been for many years one of the important radio outlets of the St. Louis metropolitan district. All these institutions have carried on television experimentation for several years and now feel ready to enter the television programing field through regular noncommercial educational stations.

First Educational TV Station Serves the Community

By RICHARD C. HULL*

THE PIONEER TELEVISION STATION, WOI–TV, at the State College of Iowa at Ames, began operations on February 21, 1950, licensed to transmit on Channel 4 with a radiated power of 13,600 watts. The station operates from an antenna elevation 1,610 feet above sea level with broadcasts scheduled for schools each afternoon and for general audiences each evening Monday through Friday. Serving an area more than 55 miles in radius, the college television outlet reaches a population area of 600,000 people located in the richest and most heavily populated part of Iowa. Not only are residents of six major Iowa cities in the primary coverage area of the new television station but also hundreds of secondary and elementary schools and farm homes.

Development of the Station

No sudden development, the Iowa State College television project has been under study since 1945. In that year Charles E. Friley, president of the institution, mindful of the major role which AM Station WOI had played in the off-campus educational program of the college, and conscious of the impending technological revolution in communications, appointed a committee to appraise the future roles of FM and television broadcasting for the school.

As a result of that study, the college applied for and was granted FCC permission to construct and operate a new FM and a new TV station. It thus became the first educational institution with permission to operate its own TV facilities, and the only college or university presently equipped to broadcast with all three of the modern broadcast media, AM, FM, and TV.

Economy dictated a unique engineering design split into three successive phases—FM construction, TV construction, and AM modernization. Final plans specified a single transmitter building large enough to house all three, an independent Diesel power source, workshop, and a single guyed tower, 580 feet in height. The single tower was designed to serve as the supporting structure for the FM antenna and the TV antenna and ultimately to replace the present WOI (AM) tower. It will provide accommodations for three separate transmissions over a single antenna and from a single building.

Program Policy

Program policy of WOI–TV parallels that of WOI and WOI–FM. Video broadcasts serve special and general interests of Iowa farmers and homemakers, schools, and adult education groups, as well as the general public. Telecasts include operatic productions, classical and current drama, popular science, travel, and world affairs.

Programing and operation plans outlined development in three stages to minimize cost and to provide maximum initial service. In the first phase WOI-TV transmitted all programs on film and slide projectors making full use of a 16-millimeter camera crew and rapid developer devices for local programing, postponing "live" studio productions until a later period. Second phase of development was the purchase of a mobile television unit and live TV field camera section which is used for remote sports broadcasts, meetings, laboratory activities, and classroom demonstrations. The third and last phase has been the construction of television studios.

For the first 2 years of operation college broadcasts may be supplemented with TV programs from all

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four of the national TV networks. This unique arrangement stems from the fact that the current FCC freeze on TV construction has cut Des Moines and important nearby cities out of commercial TV outlets. Until such stations can be set up, WOI–TV faces an unusual problem since the entire burden of opening and expanding the TV market for 600,000 people and a 55-mile radius rests on the college video outlet. As commercial stations are started in the area, WOI–TV will relinquish network ties and devote full programing to college-produced shows. Network contracts give the college the right to turn down any and all programs it regards as unsuitable.

Special Aspects of Service

WOI–TV will continue to devote extensive efforts, not only to broadcasts designed to educate and entertain the general public, but to the production of special programs for use by hundreds of secondary and elementary schools within its broadcast region. Another important phase of the station's activity will be the training of young television engineers and program producers. A third phase will develop research studies to determine the effect of television broadcasts and to seek new techniques and methods in this newest of electronic media.

Educational Films in Television

By J. J. McPHERSON*

ARE EDUCATIONAL FILMS available for television use today?" "To what extent are television stations now making use of such films?" "What is the outlook for the future use of these films?"

Answers to these questions are significant today because one of the chief arguments in support of a request now before the Federal Communications Commission for the allocation of television bands for present and future educational use is that commercial television stations cannot and will not devote as much time to educational programs as is desirable from the point of view of public welfare. Since educational films of great value to the public have been and are being produced, the question of whether this type of educational material can and will be used over commercial television stations must be considered in determining whether there is a reason to reserve television bands for educationally owned and operated stations.

Availability of Educational Films for Television

Producers and distributors of educational films can be divided into two general classifications:

1. First, there are those producers and distributors who are chiefly interested in obtaining as wide an audience for their films as possible. This description includes (1) organizations and agencies representing Federal, State, and local governmental agencies; (2) foreign governments, industrial and commercial organizations who sponsor films designed to create good will for their organizations; and (3) nonprofit organizations that are seeking to educate the public with respect to some area of information with which they are particularly concerned. All of these groups have one purpose in common in offering films for general public distribution: They are primarily interested in obtaining as wide distribution of their films as is possible. For this reason all of these groups are also interested in having their films used on television. The only films that they do not make available are the ones for which they have not been able to secure television copyrights or the permission of artists appearing in them. In most cases they do not permit their films to be edited or used in part without special permission. Almost without exception, all films now being released by such organizations are cleared for television use.

Agencies and organizations of this type are not only permitting their films to be used on television but are also carrying on campaigns to encourage program and film directors to use their films. This is particularly true of commercial organizations which offer free films as a part of their public relations and advertising programs. In July 1950, the

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Office of Education published a list of 220 films produced by United States governmental agencies cleared for television use. A similar list as of December 1950 includes 392 titles.

Films of this type are usually made available at no cost or at a service charge to cover merely the cost of handling the films.

2. The second classification of producers and distributors of films includes those persons and organizations that operate on a profit basis. This group includes Encyclopaedia Britannica Films, Coronet Films, McGraw-Hill Publishing Co., Young America Films, Knowledge Builders, United World Films, and similar organizations. For all of these organizations, the $64 question has been, "Will the telecast of educational films reduce substantially the rental and purchase of films by schools and other educational agencies?" Since film exchanges located throughout the country consistently report that the televizing of feature-length entertainment films reduces substantially the rental call for these films, educational film producers have approached this problem cautiously.

One producer, Encyclopaedia Britannica Films, participated in a series of experimental studies in which educational films were televized in Boston and Baltimore in order to find just what effect the television use of their films would have on the sale and rental of the same films in the Boston and Baltimore areas. The results of these studies showed to the satisfaction of the organization that the televizing of their educational films causes an increase in the demand for such films by educational agencies. Consequently, Encyclopaedia Britannica Films has prepared "packages" of related films which are being offered in groups of 13 films to television stations under such titles as, "Our Animal Friends," "Carnival for Kids," "The How of Sports," "History Comes Alive," "Here's to your Health," "Artcraft Time," "Children Around the World," and "Americans at Work." Television program directors are being circularized with promotional materials, and local representatives of the organization now call on program directors as a regular part of their work. In addition, a series of 21 films on the lives of great people is being offered to major networks at prices that are comparable with prices charged for entertainment films of similar length.

It can be expected that other producers of educational films who have not yet done so will soon make their films available for television use. At the present time approximately 75 percent of currently available educational films suitable for television use are cleared for television. In some instances, the obtaining of television clearance has involved so many difficulties that at least one producer, the Jam Handy Organization, is making no effort to clear for television school service films produced before television became a factor in the educational film field. However, both it and all other major producers of educational films are today making sure that their new films are cleared for television.

An important distributor of educational films that does not fall into the two general classifications described is Teaching Film Custodians, the organization set up by Motion Picture Association of America to enable schools to use worth-while entertainment shorts produced by members of the association. According to the present policy of Teaching Film Custodians, none of its films can be released for television use under any circumstances.

Extent of Use of Educational Films

In the absence of a currently valid survey of the television stations of the nation, it is not possible to make an accurate statement concerning the use of educational films on television. However, judging by printed programs and interviews with a few program directors, television stations today are making little use of a great wealth of educational film material. Of the films that are being used, most are free films obtainable from the Government or from various commercial organizations. Educational films that have a rental fee are seldom used except by Station WOI-TV, which is owned and operated by Iowa State College at Ames, Iowa.

Two program and film directors for television stations in the Washington area, C. K. Bloomquist, of WMAL-TV, and Edwin Halbert, of WTOP-TV, have suggested reasons why educational films are not more widely used. These reasons can be summarized as follows:

1. Most educational films are prepared for school use and are, therefore, not suited for general audiences.

2. Audiences expecting entertainment react unfavorably to films that are presented as "educational" films or seem to be intended for that purpose.

3. With the exception of travelogues, most educational films cannot be edited or used in part to fit available program times. The length of many educational films does not permit them to be adapted

for use in television time blocks usually available.

4. Neither program sponsors nor members of the viewing audience have expressed a demand for educational films.

5. Since most current educational films were made before the requirements of television were known, they are technically unsuited to television because they frequently contain too much detail to be shown on small screens, because they have insufficient margins around the frames so that part of the picture is lost to the television viewer, and because titles and credits cannot be read on the small screens of most television receiving sets.

6. The production quality of many educational films, it is said, is amateurish.

7. Some program directors have had difficulty in obtaining educational films on short notice.

8. The rental cost of some of the educational films for television use is higher than the cost of producing a simple live show. In the Washington area a one-reel educational short will rent for between $20 and $30. In the Baltimore area a leading producer of educational films charges $35 a reel with a running time of 10 minutes for a single use of one of his films on a sustaining program. For use on a sponsored program, the charge is $65 a reel.

9. It is difficult for the busy program director to take the time necessary to preview a great many educational films in order to find a few that might be suitable for television use.

The core of all of these objections lies in the fact that program directors feel that most educational films do not have wide audience appeal. One program director frankly admitted that educational films were used by his station only when programs offered by competing stations were so good that his station did not wish to use more costly network or live-talent shows. The same director said that he used only free films for his programs and that they were used only on sustaining programs.

Outlook for the Future

Present indications are that there will continue to be slow growth in the use of educational films by commercial television stations. However, in the future as at the present, most of this use will be by independent stations rather than by networks.

Producers of educational films are hoping that "prestige" advertisers, who wish to have program material (1) which is more dignified than horse operas and cartoon films or (2) which appeals to a different type of televiewer, will turn to the use of educational films to solve their problem. An example of the trend in this direction is the use of the Encyclopaedia Britannica Film series, "The How of Sports," by an organization of bankers in Baltimore.

There will also be an increase in the number of film programs with higher educational content prepared especially for television. Mr. Halbert, previously mentioned, has pointed out that program directors and television executives are also people who have friends and children of their own and are often very conscious of the responsibility television has to present worth-while materials. Film materials that have good informational messages and are at the same time of general public interest will be welcomed by program directors, according to Mr. Halbert.

Another factor that may influence the use of educational films is the increase in the number of television stations serving each locality. As stations increase in number, there will be a greater demand for materials and greater competition among the stations for minority audiences who are interested in particular types of program materials.

Definite reasons exist why the growth in the use of educational films will continue to be slow: (1) Educational films used by commercial television stations will generally have to fit the Procrustean bed of commercial time schedules. Worth-while film materials that are too long or too short will not usually be considered. (2) Live entertainment shows will continue to dominate network programs, so that educational films will be used primarily by independent stations and largely for sustaining programs. (3) Many educational films are of interest to much less than a majority of the televiewing audience, and the occasions on which stations will consciously use materials that they feel have limited appeal will continue to be few. (4) The total amount of time which can be devoted to the use of worth-while educational films by commercial television stations is so limited that they can never offer the means educators are looking for to make available to the public all of the worth-while educational films it is their right to have an opportunity to see.

Conclusion

In capsule conclusion, it can be said that today approximately 75 percent of all available educational films can be secured for television use on a free or

rental basis. In the future this percentage will be even higher because currently produced films are being cleared for television as a matter of routine. At present commercial television stations are using only a small number of available films. Even though this use can be expected to increase slowly in the future, it is not likely that the full potentialities of educational films can be made available to the public through commercial television outlets. The only television station in the Nation that is currently using a higher percentage of educational films is also the only television station operated by an educational organization, Station WOI–TV, of Iowa State College at Ames, Iowa. For these reasons it must be concluded that the fullest use of educational films in the interest of the public can be made possible only through the development of educationally owned and operated television stations in all sections of the United States.

Public Service Through Television

(*From page 176*)

programs over the Minneapolis-St. Paul local outlets.

The State University of Iowa, one of the leading radio "spots" of the United States, works directly in the TV production field while awaiting its own TV station.

Creighton University at Omaha has also pioneered in television; it has presented some of the best science programs of the Nation.

Pacific Coast

Some Pacific coast institutions also provide TV services. William H. Sener at University of Southern California and Walter Kingson at University of California (Los Angeles) are writing and producing TV dramatic and musical performances. The Los Angeles city schools have daily school programing.

State College at San Francisco and the University of California at Berkeley regularly provide programs for the TV stations of the Bay area.

The College of the Pacific at Stockton, Calif., works constantly in the TV experimental field and produces over San Francisco facilities.

The University of Washington and the Seattle public schools telecast regularly over the Seattle TV station. The State College of Washington is giving courses in television in preparation for its projected station.

From these notes and descriptions it is apparent that a goodly number of colleges and universities are engaged in various television activities. These activities represent only a beginning, but they do indicate a serious interest on the part of institutions. Moreover, through these services the colleges and universities are gaining experience with this new means of education which is paving the way for its more extensive use in the future.

Wayne University's Telecasts

WAYNE UNIVERSITY, Detroit, Mich., on February 26 began a 13-week series of television programs in cooperation with WJBK–TV. The programs, under the general title "Wayne University on Television," are offered daily, Monday through Friday, from 1 to 1:30 p. m. Station WKZO–TV, Kalamazoo, also carries the series. All the programs are produced by members of the university staff with the technical assistance of WJBK–TV personnel.

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